

The opinion in support of the decision being entered today
is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte HEATHER D. BOEK and PUSHKAR TANDON

Appeal 2006-2592
Application 10/035,535
Technology Center 1700

Decided: July 26, 2007

Before BRADLEY R. GARRIS, THOMAS A. WALTZ, and
PETER F. KRATZ, *Administrative Patent Judges*.

WALTZ, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 from the Primary Examiner's final rejection of claims 1-3, 6-31, and 36-37, which are the only claims pending in this application. We have jurisdiction pursuant to 35 U.S.C. § 134.

According to Appellants, the invention is directed to a method of manufacturing an optical waveguide preform by exposing an optical waveguide soot preform to an atmosphere comprising a chlorine-containing

gas to dope the preform with chlorine, where the atmosphere is at an absolute pressure substantially greater than 1.013×10^2 kPa (Br. 2).

Independent claim 1 is illustrative of the invention and is reproduced below:

1. A method of manufacturing an optical waveguide preform, said method comprising:

exposing a soot preform to an atmosphere including a chlorine-containing gas and thereby doping the soot preform with chlorine, wherein the absolute pressure of the atmosphere is substantially greater than 1.013×10^2 kPa and the mole percentage of chlorine present in the atmosphere is between about 20% and 40%.

The Examiner has relied on the following prior art references as evidence of obviousness:

Ishikawa US 6,116,055 Sep. 12, 2000

Kingery, *Introduction to Ceramics* 219-226 (2d. ed., John Wiley & Sons, 1976)

ISSUES ON APPEAL

Claims 1-3, 6-31, and 36-37 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Ishikawa in view of Kingery (Answer 3).

Appellants contend that Ishikawa and Kingery at best provide an incentive to try, since Ishikawa teaches that partial pressures greater than 1 atmosphere present a problem, and provides no motivation or expectation of success in trying high pressures (Br. 4-5).

Appellants contend that Ishikawa provides no enablement on how to overcome the problem and specifically discourages extending the partial pressure above 1 atmosphere (Br. 5).

The Examiner contends that Ishikawa does not teach the pressure as required by claim 1 on appeal but teaches use of pressures greater than

atmospheric (Answer 3). The Examiner contends that one of ordinary skill in this art, using the principles taught by Kingery, would have used higher pressures to maximize the amount of chlorine in the preform (Answer 3-4).

The Examiner contends that using higher pressures, as taught by Ishikawa, will present only the hardship of using a complex furnace structure, which would have been well within the ordinary skill in this art (Answer 8-9).

Accordingly, the issues presented on the record in this appeal are as follows: (1) Does Ishikawa “teach away” from the required pressure in claim 1 on appeal?; and (2) Does the Examiner present a reasoned analysis supporting the combination of Ishikawa and Kingery?

We determine that the Examiner has established a prima facie case of obviousness in view of the reference evidence, and this prima facie case has not been adequately rebutted by Appellants’ arguments. Therefore, we AFFIRM the sole rejection on appeal essentially for the reasons stated in the Answer, as well as those reasons set forth below.

OPINION

We determine the following factual findings from the record in this appeal:

- (1) Ishikawa discloses a method for doping chlorine into silica glass where the refractive index may be controlled by changing the chlorine partial pressure during the treatment of a “soot” preform (col. 1, ll. 7-8 and 21-25);
- (2) Ishikawa teaches that this process is applicable to a method of making a preform for an optical fiber (Example 1 at col. 5, ll.

25-31), and the partial pressure of the chlorine-containing gas is “preferably” maintained in the range of 0.03 to 1 atm (col. 1, ll. 56-59) in an amount of from 3-60 vol. % (col. 8, ll. 24-25);¹

- (3) Ishikawa teaches that “if it [the partial pressure] is more than 1 atm, a pressurized furnace must be used, entailing a problem of complex furnace structure” (col. 1, ll. 63-65); and
- (4) Kingery teaches that the higher the concentration of solute, the more the solute diffuses into a body (Kingery 225; Answer 3).

Under the proper legal standard, a reference will teach away when it suggests that the developments flowing from its disclosures are unlikely to produce the objective of the applicant’s invention. *See In re Gurley*, 27 F.3d 551, 553, 31 USPQ2d 1130, 1131 (Fed. Cir. 1994). “The law is replete with cases in which the difference between the claimed invention and the prior art is some range or other variable within the claims. [Citations omitted].

These cases have consistently held that in such a situation, the applicant must show that the particular range is *critical*, generally by showing that the claimed range achieves unexpected results relative to the prior art range.”

In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990). Under 35 U.S.C. § 103, the factual inquiry into obviousness requires a determination of: (1) the scope and content of the prior art; (2) the differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) secondary considerations. *See Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-18, 148 USPQ 459, 467

¹ The Examiner states that 1 atm = 1.013x10² kPa (Answer 3) and Appellants do not contest this statement. Therefore, for purposes of this appeal, we accept this as a fact.

(1966). The analysis supporting obviousness should be made explicit, and should “identify a reason that would have prompted a person of ordinary skill in the art to combine the elements” in the manner claimed. *KSR Int’l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1731, 82 USPQ2d 1385, 1389 (2007).

Applying the preceding legal principles to the factual findings in the record of this appeal, we determine that the Examiner has properly established a prima facie case of obviousness, which prima facie case has not been adequately rebutted by any evidence or arguments. As shown by factual findings (1) and (2) listed above, we determine that Ishikawa discloses every limitation of claim 1 on appeal except the required pressure of “substantially greater than 1.013×10^2 kPa” (Answer 3).² As shown by factual finding (3) listed above, we determine that Ishikawa does not suggest that developments flowing from its disclosure are unlikely to produce the objective of Appellants’ invention, namely, to improve chlorine doping levels (Specification 1:25 to 2:2). We determine that Ishikawa suggests that higher partial pressures of chlorine-containing gas will be effective but would require modification of the furnace structure to contain high pressure gases (*see* factual finding (3) listed above). Thus, we determine that Ishikawa does not teach away from the claimed subject matter.³

We determine that claiming a range of pressure that differs slightly from the prior art pressure range would have been prima facie obvious. *See*

² Appellants assert that all pending claims stand or fall together (Br. 3). Accordingly, we select independent claim 1 and limit our consideration to this claim.

³ We note that Appellants follow the teachings of Ishikawa by using higher chlorine gas partial pressures, which require modification of the conventional furnace structure (Specification 5:5-8).

In re Woodruff, supra. We note that no evidence of unexpected results has been submitted by Appellants. Furthermore, as stated by the Examiner and not disputed by Appellants, it was known in the art that the higher the partial pressure of a solute in a gas, the higher the concentration, and the higher the concentration, the more the solute diffuses into a body (Answer 3-4, citing Kingery; *see* factual finding (4) listed above). We agree with the Examiner's reasoned analysis as stated in the Answer (3-4 and 7-11).

For the foregoing reasons and those stated in the Answer, we affirm the rejection of the claims on appeal under § 103(a) over Ishikawa in view of Kingery.

OTHER ISSUES

In the event of further or continuing prosecution of the claimed subject matter, the Examiner and Appellants should review the claimed phrase “substantially greater than 1.013×10^2 kPa” to determine if the requirements of 35 U.S.C. § 112, first and second paragraphs, have been fulfilled. Specifically, under the “written description” requirement of the first paragraph, the basis in the original Specification or claims for this phrase should be cited by Appellants. Under the “definiteness” requirement of the second paragraph, Appellants and the Examiner should determine what the scope of “substantially” encompasses since it appears that this term is not defined in the original Specification. For example, what is the lower limit of the claimed pressure range? We note that particular embodiments appearing in the Specification will not be read into the claims when the claim language is broader than such embodiments.

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TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

clj

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